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Aging, self-regulation, and cognitive success

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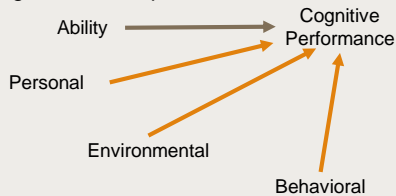
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Successful self-regulation

- ★ Personal beliefs and environmental feedback affect choices about behavior, which has cognitive consequences



Bandura, 1997; Strickland-Hughes & West, 2017; West & Strickland-Hughes, 2016; West, Strickland-Hughes, & Smith, 2018

Research program

1. Personal beliefs about aging which may limit cognitive success
2. Self-regulatory factors that promote cognitive success
3. Ways to enhance everyday memory through training

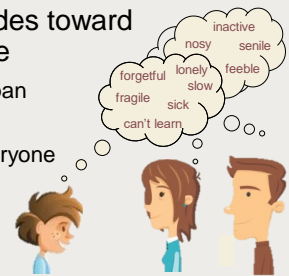
Research program

1. Personal beliefs about aging which may limit cognitive success
2. Self-regulatory factors that promote cognitive success
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1. Personal beliefs about aging which may limit cognitive success

Negative attitudes toward aging pervasive

- ★ Across the lifespan
- ★ Across cultures
- ★ Relevant for everyone

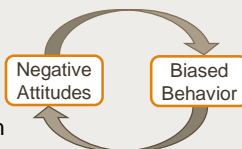


Hummert, 2011

1. Personal beliefs about aging which may limit cognitive success

Attitudes influence behavior (which influences attitudes of others)

- ★ Ageism
 - ◆ Prejudice
 - ◆ Discrimination
- ★ 77% older adults experienced ageism

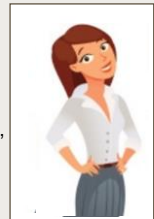


Hess, 2006; Nelson, 2004

1. Personal beliefs about aging which may limit cognitive success

Negative aging attitudes in younger adults are later threat

- ★ **Worse performance:** memory, handwriting, walking speed
- ★ **Detrimental health outcomes:** poor recovery from disability (-), more strokes (+), heart attacks (+), and Alzheimer's (+)
- ★ **Reduced longevity:** 7.5 years



Levy et al., 2012; Levy et al. 2015

Changing aging attitudes



★ Reducing negative aging attitudes

★ Enhancing positive aging attitudes

How?

+ knowledge: – stereotyping

+ contact: – negative attitudes

Allan & Johnson, 2009; Palmore, 2015

Research questions

Age Stereotypes and Knowledge (ASK) Study

1. How is ageism related to aging beliefs and experience in younger adults?
2. Are aging beliefs more positive with increased aging knowledge?

ASK Study Design

- ★ Online surveys
- ★ **2 time points** in 15-week-long semester
 - ◆ First week (pretest)
 - ◆ Last week (posttest)
- ★ **2 groups:**

Aging Class



Control Class



Aging class: n = 48; 10% pretest only, 12% posttest only, 77% both
Control class: n = 30; 13% pretest only, 13% posttest only, 73% both

Psychology of Aging

Objectives

- ★ Normative aging
- ★ Multidirectional
- ★ Multidimensional
- ★ Multiple influences
- ★ Age ≠ bad
- ★ Aging doesn't begin when you're old

Format

- ★ Didactic instruction and in-class activities
- ★ Student presentations
- ★ Examinations
- ★ Comprehensive essays
- ★ Interaction with older adults
- ★ Death over Dinner

ASK Methods: Measures

- ★ Ageism
- ★ Ratings of older faces
- ★ Implicit age attitudes
 - ◆ Positive
 - ◆ Negative
- ★ Aging anxiety
- ★ Contact with older men and women



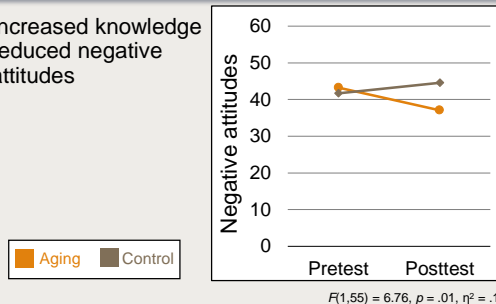
Predicting ageism at pretest

- ★ Lower ageism explained by
 - ◆ More frequent quality contact, $\beta = -.25, p < .05$
 - ◆ More positive face ratings, $\beta = -.26, p < .05$
 - ◆ Elevated positive attitudes, $\beta = -.27, p < .05$
 - ◆ Less aging anxiety, $\beta = .39, p < .05$
- ★ Aging anxiety relatively most important
- ★ Negative attitudes not important, $\beta = .10, p > .05$
- ★ Explained 51% variance in ageism

Regression assumptions met.

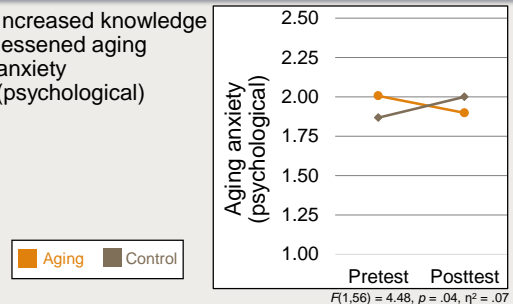
Enhancing aging beliefs

Increased knowledge
reduced negative
attitudes



Enhancing aging beliefs

Increased knowledge
lessened aging
anxiety
(psychological)



Formal education can enhance aging attitudes!

- ★ Quality contact with older persons not enough
- ★ Aging anxiety important target
- ★ Positive vs. negative attitudes
- ★ **Replication:** Data analysis underway
 - ◆ Increased intergenerational contact
 - ◆ Emphasized control overall aging
 - ◆ Smaller, but more diverse, sample

Research program

1. Personal beliefs about aging which may limit cognitive success
2. Self-regulatory factors that promote cognitive success
3. Ways to enhance everyday memory through training

2. Self-regulatory factors and cognitive success

- ★ Targeted self-regulatory factors
 - ◆ Goal-setting & feedback
 - ◆ Self-evaluative beliefs
 - ◆ Future expectations
- ★ Positive correlates of memory
- ★ Decline with increased age

Strickland-Hughes, West, Smith, & Ebner, 2016; West, Strickland-Hughes, & Smith, under revision; Tasdemir-Ozdes, Strickland-Hughes, Bluck & Ebner, 2016

2. Self-regulatory factors and cognitive success



Name memory

- ★ Highly valued
- ★ Difficult for adults of all ages
- ★ Performance declines with increased age



Feedback and memory

- ★ Mixed effects reported
 - ◆ Complex interaction with personal beliefs
- ★ More influential for younger than older adults
- ★ Positive feedback may be motivating
 - ◆ Especially with high memory self-efficacy

Memory self-efficacy (MSE)

- ★ Predicts current and future memory (6 yrs.)
- ★ Decreased by negative stereotyping
- ★ Old < young



Beaudoin & Desrichard, 2010; Valentijn et al., 2006; West, Bagwell & Dark-Freudeman, 2008

Research aims

Feedback and Faces Study

1. Examine influence of false performance feedback on younger and older adults name memory
2. Test impact of feedback on personal beliefs and indirect effects of feedback on memory through personal beliefs

Design and procedure

Mixed-model design

- ◆ 2 age (between: YA, OA)
- ◆ 3 feedback conditions (between: P, N, C)
- ◆ 2 name memory (within: recognition, recall)

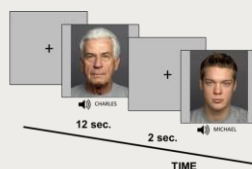
Outcomes

- ★ Memory task with feedback
- ★ Personal beliefs assessed before and after

YA = Younger adults, OA = Older adults, P = Positive, N = Negative, C = Control

Procedure

Encoding

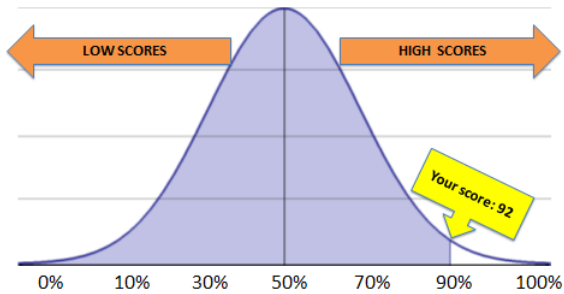


Testing



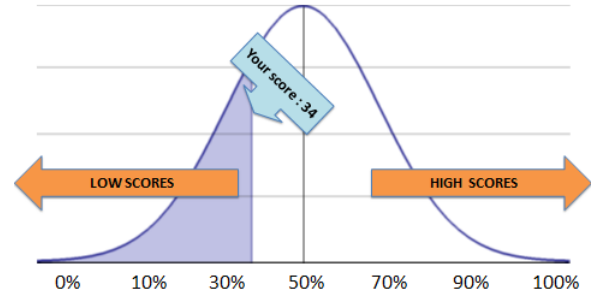
Congratulations!

Your Score : 92th percentile for your age group



Thank you.

Your Score : 34th percentile for your age group

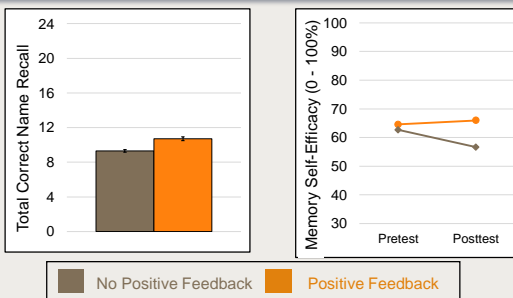


Thank
you!

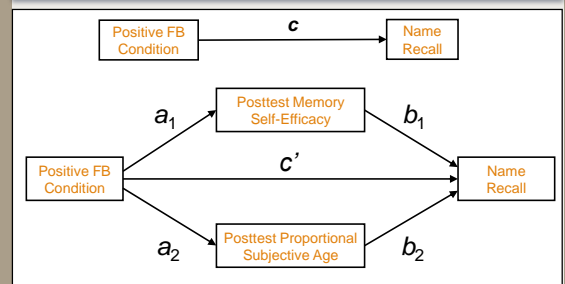
Please wait
for the
assistant to
load the next
block of
trials.

Results

Better name recall and greater memory self-efficacy with positive feedback

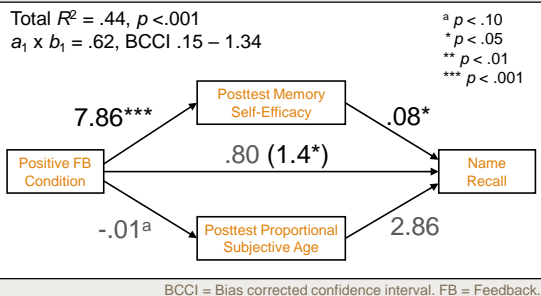


Hypothesized mediation model



FB = Feedback. INDIRECT script, Preacher & Hayes, 2008

Positive feedback
→ higher posttest MSE
→ better name recall



2. Self-regulatory factors and cognitive success

- ★ Feedback (environmental) affects beliefs (personal) and memory performance (behavior)
- ★ Positive feedback
 - memory self-efficacy
 - name recall memory

Research program

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3. Ways to enhance everyday memory through training

- ★ Strategy use for episodic memory
- ★ Effective for older persons
 - ♦ Gains in trained abilities
 - ♦ Immediately after training
- ★ Assumption memory gains reflect *effective* strategy use

What's the best approach for this task?



Strickland-Hughes & West, 2017; West & Strickland-Hughes, 2016

Self-regulation in training

Two considerations

- ★ Enhanced from training
- ★ Value-added to training



Strickland-Hughes & West, in press; West & Strickland-Hughes, 2016

Self-regulation in training

Focus on 2 self-regulatory factors

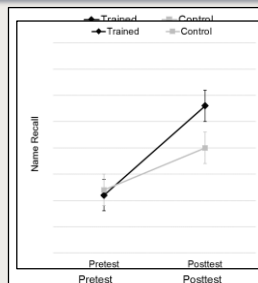
- ★ Memory self-efficacy (personal)
- ★ Strategy use (behavior)
- ★ Positive correlates of memory performance
 - ♦ Relationship strengthens with age
- ★ Old < young
- ★ Underlie training gains in performance

Agrigoroaei et al., 2013; Beaudoin & Desrichard, 2010; Cavallini et al., 2010; Gross & Rebok, 2011

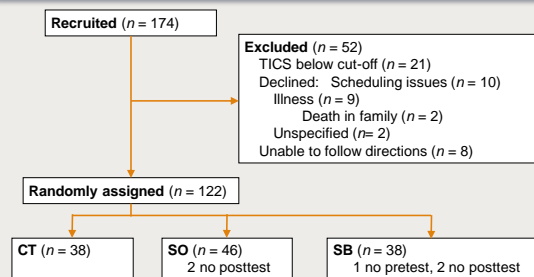
Aims and hypotheses

Key issue: Evaluate abbreviated version of tested effective program

1. Targeted task
2. Self-regulatory factors
 - ★ Memory self-efficacy
 - ★ Effective strategy use
3. Near transfer



Participants (N = 122)



Procedure

| Week | Groups | Agenda | Self-reg elements |
|------|-------------------------|--|-------------------|
| 0 | All | Phone interview | n/a |
| 1 | All | Pretest assessment | n/a |
| 2 | Strategy + beliefs (SB) | A. 2-hr group training session B. ~ 2 - 3 hrs self-study workbook | ✓+ |
| | Strategy - only (SO) | A. 2-hr group training session B. ~ 2 - 3 hrs self-study workbook | ✓ |
| | Control (CT) | No meeting, homework, activity | ✗ |
| 3 | All | Posttest assessment | n/a |

Training elements to enhance self-regulation

- ★ **Enactive mastery**
 - ♦ Repeated practice
- ★ **Vicarious experience**
 - ♦ Trainer models technique and whole group practices together
- ★ **Verbal persuasion**
 - ♦ Group provides social support
- ★ **Physiologic and affective states**
 - ♦ At home materials allowed for self-paced practice

Bandura, 1997; Smith & West, 2006; West et al., 2008

Pre-post assessments

Target outcome

- ★ Name recall

Self-regulatory factors

- ★ Strategies checklist
- ★ Memory self-efficacy

Transfer outcomes

- ★ Object-location visual association
- ★ Occupation-name verbal association

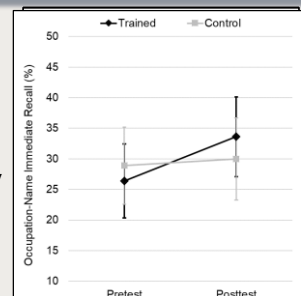


Blind
Timed memory assessments and self-paced surveys
Duration: 2 hours

Effectiveness of brief training

Yes, abbreviated name recall training effective:

1. Enhanced name recall performance
2. Improved self-regulatory factors
3. Near transfer effects



Brief training effective beyond target task

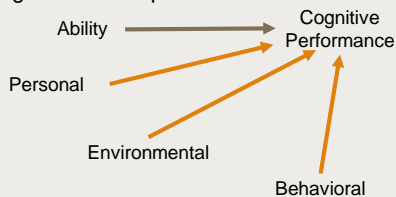
- Enhanced self-regulatory factors
 - Key to maximizing training impact
 - Near transfer effects
 - Contradicts "generalist assumption"
- ★ "Bang for buck"
 - ★ Ease of broad dissemination
 - ★ Possible translation of benefits from laboratory to everyday life

Aging, self-regulation, and cognitive success

- Personal beliefs about aging which may limit cognitive success
- Self-regulatory factors that promote cognitive success
- Ways to enhance everyday memory through training

Aging, self-regulation, and cognitive success

- ★ Personal beliefs and environmental feedback affect choices about behavior, which has cognitive consequences



Bandura, 1997; Strickland-Hughes & West, in press; West & Strickland-Hughes, 2016; West, Strickland-Hughes, & Smith, under revision

Future directions

-
- ```

graph LR
 Ability --> CognitivePerformance[Cognitive Performance]
 Personal --> CognitivePerformance
 Environmental --> CognitivePerformance
 Behavioral --> CognitivePerformance

```
- ★ Variance in antecedents of ageism across adulthood and ethnic groups?
  - ★ Impact of varied types of feedback (e.g., objective, self-appraisal) on cognitive success
  - ★ Effect of memory training on aging attitudes and on impact of negative effects of aging attitudes (e.g., stereotype threat)
  - ★ Differential self-regulatory benefits (immediate and long-term) from training with/out goals and feedback and varied comparison groups (e.g., self-study, social control)
- Current Projects**
- ★ ASK 2.0: Replication
  - ★ IDEA
  - ★ Stereotype threat

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### Aging and Cognitive Training Lab



### Age and Memory Lab

